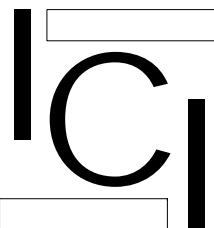
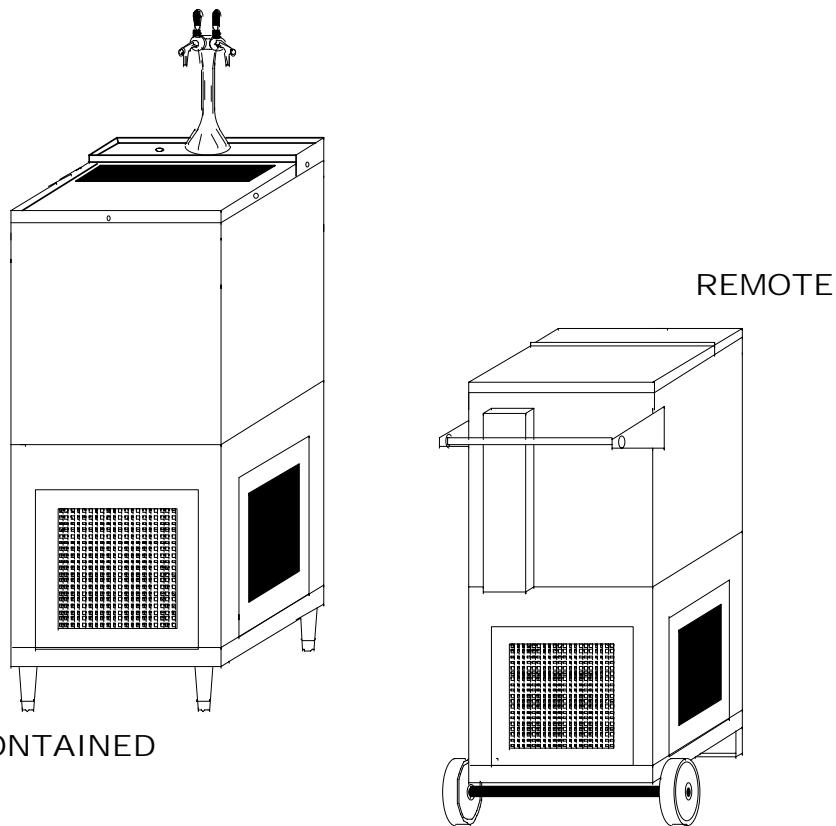


"FLASH CHILLER"

VLM-FC

Installation and Service Manual



INTERNATIONAL CARBONIC INC.

16630 KOALA DR.

ADELANTO, CA. 92301

IMPORTANT: This manual is a guide for installing, operating, servicing and maintaining this equipment. Refer to Table of Contents for page location of detailed information to answer questions that arise during installation, operating, service and maintenance, or installation of this equipment.

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PREFACE

INTERNATIONAL CARBONIC INC. has enjoyed over 52 years of manufacturing excellence in the field of carbonation and in the beverage related industry. We have had a long and proud history with quality as our standard and innovation as our goal. Originally started just after World War II in Canfield, Ohio as Carbonic Dispensers. We enjoyed patents on the first Sodajet type carbonator. This method of carbonation instantaneously carbonated the water to 100% saturation. We developed the first patented dispensing valve to dispense bulk beverage with carbonation equal to or in excess of bottled beverages. A valve with three flavors and soda was another first. We were the first to incorporate the total postmix package, i.e., carbonation, refrigeration, and the ability to dispense from one self contained unit. We have pioneered many such firsts and will continue to develop advanced systems for the future, such as electronic interrogatable portion controls to electronic liquid level controls.

We hope you enjoy this piece of equipment that has been produced to give many years of trouble free service. We thank you for your purchase and hope we may serve you in the future.

CHAPTER I

GENERAL DESCRIPTION

This chapter gives the description, theory of operation, and design data for the FLASH CHILLER and FLASH CHILLER-3/4, and related components.

SYSTEM DESCRIPTION

The FLASH CHILLER is a complete self-contained remote cooling unit which when combined with related components, will cool and dispense ice-cold beer.

The FLASH CHILLER consists of a condensing unit, a water reservoir, beer cooling coils, an agitator pump housed in an all stainless steel cabinet. The FLASH CHILLER is manufactured with all stainless steel construction and is insulated with polyurethane foam. The FLASH CHILLER is manufactured in remote or self-contained configurations. The Flash Chiller is manufactured as a standard 1/2 H.P. condensing unit and can be manufactured in a 3/4 H.P. configuration. Both models can be manufactured in a remote configuration.

For proper function the FLASH CHILLER must have an electrical supply and drainage.

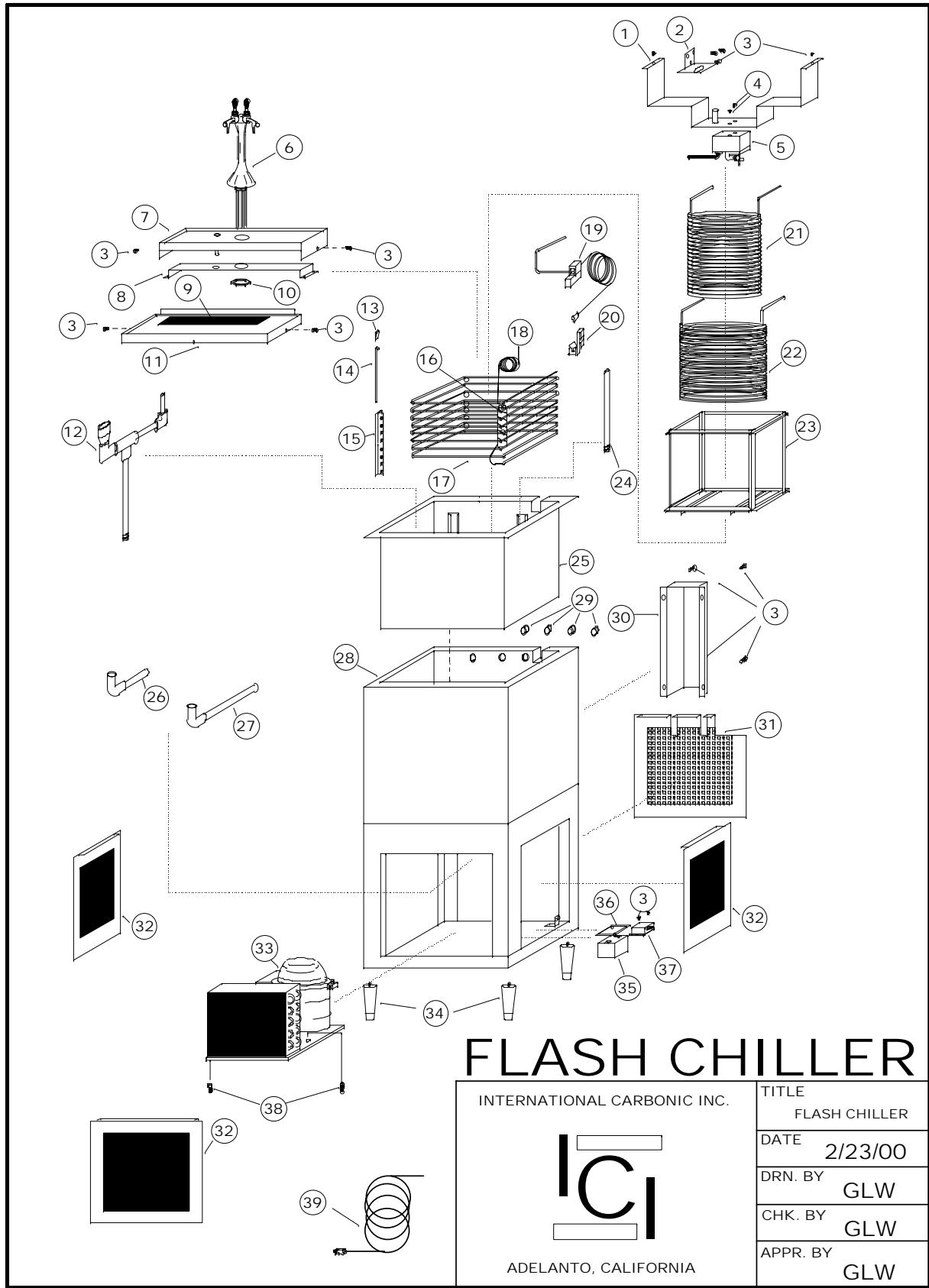
DESIGN DATA

COOLING UNIT

Overall cabinet dimensions:	FLASH CHILLER	FLASH CHILLER 3/4
Height	45 5/8"	47 5/8"
Width	22"	22"
Depth	24 1/2"	24 1/2"
Weights:		
Shipping	228	255
Dry weight	193	220
Operational Weight	379	406
Ice Bank	90	90
Capacities:	Unit water bath (no ice bank)	22.5 gallons
Refrigerant requirement (R-134-A)	1/2 H.P. 285	3/4 H.P. 331 grams
Ambient operating temperature		40 F to 100 F.

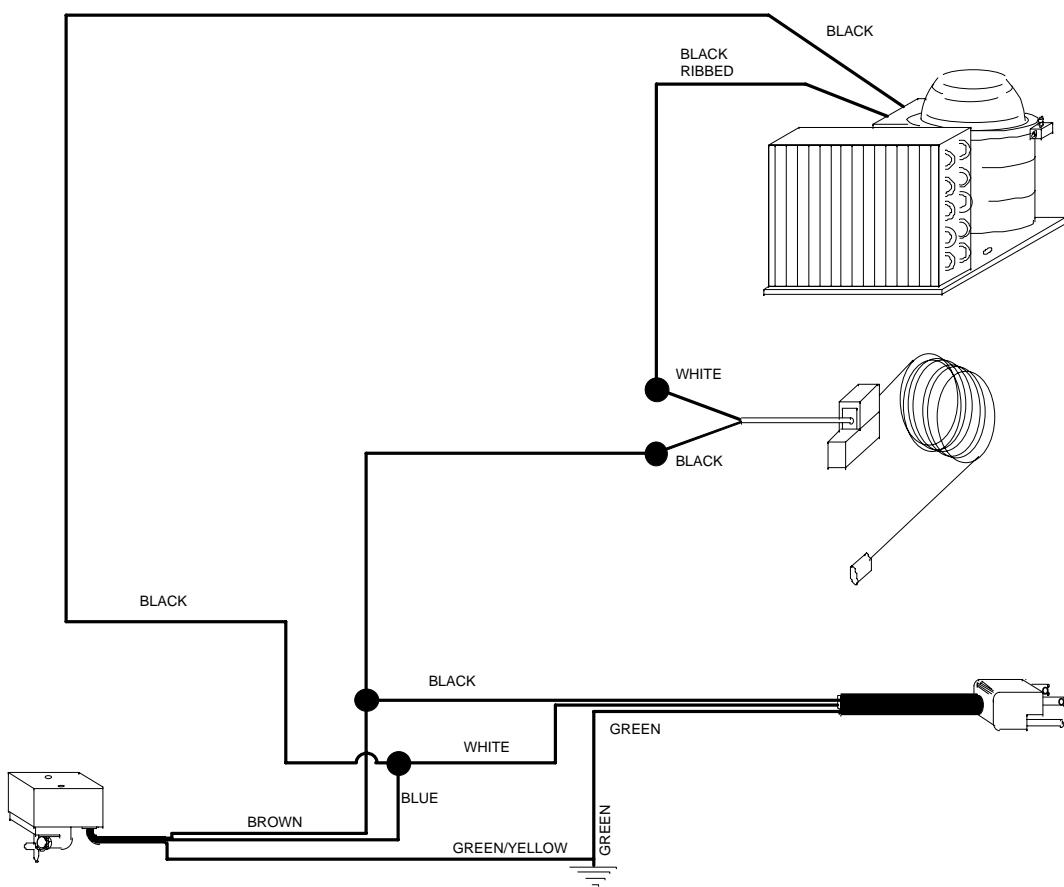
Electrical Requirements: The cooling unit requires a 115 VAC 60 Hertz or 220 VAC 50 Hertz single-phase power circuit. Please notify the factory or factory representative if a deviation of this requirement is required.

	FLASH CHILLER 110VAC	FLASH CHILLER 220VAC	FLASH CHILLER 3/4 110VAC	FLASH CHILLER 3/4 220VAC
Circuit Ampacity	10.2 Amps	5.1 Amps	11.5 Amps	5.8 Amps
Condensing Unit	8.8 Amps	4.4 Amps	10.1 Amps	5.1 Amps
Agitator	1.4 Amps	.7 Amps	1.4 Amps	.7 Amps

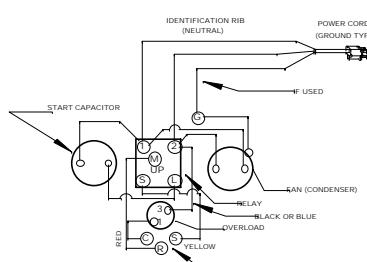


FLASH CHILLER

SYM	QTY	PART NO.	DESCRIPTION
1	1	S-416	AGITATOR/COIL POSITIONING BRACKET
2	1	S-417	WASTE DRAIN POSITIONING BRACKET
3	1	A-20	SCREW, 8-32 X 3/8 T.H., S.S.
4	2	F-4	SCREW
5	1	S-850	AGITATOR/CIRCULATOR PUMP
6	1	42-1020-80	TWO FAUCET BEER TOWER
7	1	S-418	RISER
8	1	S-419	RISER STIFFENER
9	1	S-420	MUG REST
10	1	TOWER JAM NUT
11	1	S-421	TOP
12	1	S-422	WASTE DRAIN ASSY.
13	4	S-1323	EVAPORATOR GUIDE WEDGE
14	4	S-499	EVAPORATOR COIL RETAINER
15	4	S-423	EVAPORATOR SUPPORT BRACKET
16	1	S-409	9" ACCUMULATOR
17	1	S-497	EVAPORATOR ASSEMBLY
18	1	1/8 CAP TUBE, 10.5
19	1	S-513-A	ICE BANK CONTROL
20	1	S-424	ICE BANK BULB BRACKET
21	1	S-425	#1 COIL 102 FEET 5/16 S.S. TUBING
22	1	S-426	#2 COIL 118 FEET 5/16 S.S. TUBING
23	1	S-427	COIL BASKET
24	1	S-428	STANDPIPE
25	1	S-429	BUCKET COMPLETE
26	1	S-430	DRAIN OUTLET, WASTE
27	1	S-489	DRAIN OUTLET, STANDPIPE
28	1	S-432	CABINET SHELL ONLY
29	4	S-46	BUSHING
30	1	S-491	REAR LINE COVER
31	1	S-433	REAR PANEL
32	3	S-434	SIDE, AND FRONT PANELS
33	1	AKA7437YXAXA	1/2 H.P. CONDENSING UNIT
		AKA4476YXA	1/2 COMPRESSOR ONLY
		AJA7465YXAXG	3/4 H.P. CONDENSING UNIT
		AJA7461YXA	3/4 COMPRESSOR ONLY
34	1 SET	S-854	LEGS
35	1	P0003	2 X 4 "J" BOX WITH LID
36	1	P0004	2 X 4 "J" LID
37	1	VDS-16P-110	COMPRESSOR PROTECTOR 110 V.
		VDS-16P-230	COMPRESSOR PROTECTOR 230 V.
38	2	A-46	5/16 X 18 FLANGE WHIZ LOCK SCREW, 3/4"
39	1	E-141-12	CORD



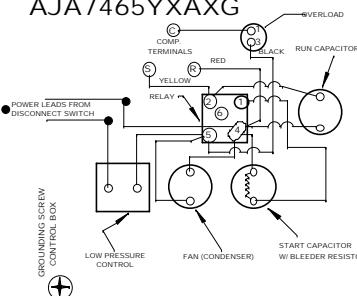
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ELECTRICAL FIELD WIRING AND INSTRUCTIONS

1. INCOMING POWER LEADS MUST BE COPPER CONDUCTORS ONLY.
2. CONNECT INCOMING GROUND LEAD TO GREEN GROUND SCREW.
3. WHEN T.P.C.O APPROVED ALTERNATE RELAY IS USED. CONNECT LEADS TO SAME NUMBERED TERMINALS, REGARDLESS OF LOCATION.
4. A JUMPER WIRE MAY BE CONNECTED BETWEEN #4 & #6 TERMINALS TO DISTRIBUTE WIRES FOR EASE OF WIRING. THE #4 AND #6 TERMINALS ARE WIRING TERMINALS WITH NO INTERNAL CONNECTION TO RELAY.

AJA7465YXAXG



INTERNATIONAL CARBONIC INC.



ADELANTO, CALIFORNIA

TITLE
FLASH CHILLER
WIRING DIAGRAM

DATE
11/1/05

DRN. BY
GLW

CHK. BY

APPR. BY

THEORY OF OPERATION

The FLASH CHILLER was designed to cool and dispense ice-cold beer.

The water bath holds approximately 22.5 gallons of water. A certain amount of this water will be transformed into ice, approximately 100 pounds. This water reserve and ice bank will act as a reservoir for refrigeration. This reserve is utilized during peak periods when the BTU output of the compressor is not sufficient to meet the demand of the draw.

INSTALLATION

This chapter covers unpacking and inspection, selecting location, installing FLASH CHILLER and related components, connecting water inlet and electrical requirements.

UNPACKING AND INSPECTION

Upon receiving unit, immediately remove unit from shipping carton and inspect for shipping damage.

NOTE: Before leaving the factory all FLASH CHILLER units were carefully inspected and the carrier has accepted and signed for them. Any damage or irregularities should be noted at the time of delivery and immediately reported to delivering carrier. Request a written inspection report from claims inspector to substantiate any necessary claim. File claim with delivering agency, not International Carbonic Inc.!

SELECTING LOCATION

IMPORTANT: Ambient temperature for FLASH CHILLER should not exceed 100 degrees "F". Operation of FLASH CHILLER in ambient above 100 degrees "F" can and will contribute to early failure of condensing unit and poor quality of finished product.

LOCATION RECOMMENDATIONS FOR FLASH CHILLER

1. Position unit as close as possible to proper electrical source.
2. Position unit with a minimum of 2" space between bulkhead and cabinet for sufficient ventilation. Allow enough space between ceiling and unit for lid removal.
3. Position unit as close as possible to proper drainage.
4. Place FLASH CHILLER in position. Make sure sufficient space between bulkheads, walls and overheads is available for proper air circulation around cooling unit.

INSTALL DRAIN LINE

1. Connect drain lines on FLASH CHILLER unit with drain using 3/4" I.D. clear plastic pipe or 3/4" PVC to nearest outlet.
2. Do not reduce drain connection from cabinet outlet.
3. Be sure all connections are watertight.

ELECTRICAL REQUIREMENTS:

The FLASH CHILLER requires a 120 VAC, single phase at 60 Hertz or 230 VAC, single phase at 50-hertz power circuit, and must be wired in accordance with N.E.C. or local ordinance.

NOTE: Check CHAPTER I for running amperage and connect to appropriate electrical circuit.

PREPARATION

All previous steps should be understood and carried out before proceeding.

PREPARING SYSTEM FOR OPERATION

PREPARING AND STARTING REFRIGERATION UNIT

1. FLASH CHILLER refrigeration is pre-set at factory and ready to operate.
2. Remove lid.
3. Fill water bath with clean water until water runs out of drain standpipe, (S-428).
4. Plug FLASH CHILLER power cord into electrical receptacle box. Two things will happen immediately. One, the agitator will come on and the compressor protector yellow light will come on. The yellow compressor protector light will come on only if proper voltage is supplied to the FLASH CHILLER. In approximately 3 minutes the green light will illuminate and the yellow light will de-energize. At this time make sure compressor and condenser fan motor. The process of cooling the water bath will now commence. With ambient and water temperature of 75 degree "F" initial pull down or formation of complete ice bank will take approximately 7 hrs. When full ice bank has been formed, compressor and condenser fan motor will stop. Agitator will continue to operate, circulating water in water bath.

CHECKING WATER BATH

Periodically check water level in water bath. If it is low more water should be added as instructed for maximum product cooling. This dehydration will normally not occur in normal temperate climate zones. With normal humidity the opposite will occur therefore a condensate drain is installed. Any extra water in the water bath will exit the unit via the drain outlet. When unit is building it's first ice bank it is normal to have water overflow the into the overflow standpipe and out drain hose.

PERIODIC CLEANING

Periodically wash all external surfaces of FLASH CHILLER cabinet, rinse with clean water, and then wipe dry with a clean soft cloth. DO NOT USE ABRASIVE TYPE CLEANERS.

CLEANING CONDENSER COIL

IMPORTANT: Air circulation through the condenser coil is required to cool the compressor. Air is drawn in through grills on the front of the FLASH CHILLER, through condenser coil and exhausted out vents and sides of FLASH CHILLER. Restricting air circulation through the FLASH CHILLER will decrease its cooling capacity.

NOTE: Cleaning condenser coil should be done during non-use periods.

1. Unplug refrigeration unit power cord from electrical socket.
2. Remove service panels.
3. Vacuum or use a soft brush to clean fins of condenser coil. Use low-pressure compressed air or CO₂ gas to blow through condenser fins. This should only be performed after normal business hours to prevent dust contamination. A damp cloth on backside of condenser coil will prevent some dust contamination
4. Replace service panels.
- S. Plug FLASH CHILLER power cord in electrical socket.

CHECKING / CHANGING WATER BATH

Periodically check water level in water bath. If it is low, more water should be added for maximum product cooling. Before adding more water, water bath and ice bank should be checked for excessive mineral deposit build up.

NOTE: The water in water bath should be changed and all components in water bath should be cleaned as often as necessary to keep it clean. A convenient time to perform this operation is when the system is being sanitized.

1. Unplug refrigeration unit power cord from electrical socket.
2. Remove lid from unit.
3. Look down into water bath (if necessary, use flashlight) and inspect water bath, ice bank and all components for cleanliness. Water, ice bank and all components should be clear and free of foreign particles. If ice bank is clear of foreign particles, it does not have to be melted down. Proceed to step 10 if foreign particles are present in the ice bank, proceed to step 4.
4. Siphon out water with short hose or pull out over flow standpipe.
5. Allow ice bank to melt. Hot water may be used to speed melting.

CAUTION: Never use an ice pick or other sharp instruments to remove ice from evaporator coil. Such practice can result in puncture to the refrigeration circuit.

6. Use fiber brush and carefully clean mineral deposit from all components.
7. Wash evaporator coil with a mild soap solution. Copper cleans well with mild solution of citric acid (1 cup of citric acid for 2 gallons of water). Stainless steel cleans well with carbonated water. Then rinse with clean water.
8. Rinse out water bath with clean water until water running out of siphon hose is clean.
9. Insert standpipe in drain hole
10. Fill water bath to top of standpipe.
11. Replace lid.
12. Plug refrigeration unit power cord in electrical socket.

SANITIZING PROCEDURES

Your local health department rules and general area cleanliness should determine the frequency at which the unit should be sanitized.

EQUIPMENT REQUIRED:

1. Stainless Steel containers (product tanks), or large volume container.
2. CO₂ Supply if applicable (Same as used with dispensing unit).
3. Cleaning Agent.
4. Sanitizing Solution.
5. Phenolphthalein.

NOTE: One recommended cleaning agent and sanitizing agent is manufactured by:

MT. HOOD CHEMICAL CORP.
4444 N.W. Yeon Avenue
Portland, Oregon 97210

Trade names are: STAR - CHLORINATED CLEANER
CROWN - 12.5% SODIUM HYPOCHLORITE BLEACH

Use STAR at 18 oz. per 1 gallon of water yields 2% Sodium Hydroxide Solution.

Use Crown at 2 ounce per 9 gallons of water (gives 200 PPM of available chlorine) at a minimum contact time of 10 minutes.

1. Disconnect syrup containers and remove product from tubing by purging with carbon dioxide or flushing with warm water.
2. Visually inspect valve by removing nozzle and inspecting nozzle and valve cavity. Clean nozzle with cleaning agent, then sanitizing solution, then with potable water. Inspect valve cavity and if dirty clean with soft bristle brush. Clean exteriors of valve with a soft clothe and warm water. Replace valve nozzle then go to step #3.
3. Fill syrup lines with a caustic-based (low sudsing, non-perfumed, and rinsed) detergent solution, (STAR). The solution should be prepared in accordance with the manufacturers recommendations, but should be at least 2 percent sodium hydroxide. Make sure the syrup lines are completely filled and allow standing for at least 10 minutes.
4. Flush the detergent solution from the syrup lines with clean water. Continue rinsing until testing with phenolphthalein shows that the rinse water is free of residual detergent.
5. Fill the syrup lines with a low PH (7.0) chloride solution containing maximum 200-PPM chlorine. Make sure that lines are completely filled and allow standing for 30 minutes.
6. Reconnect syrup containers and ready Unit for operation.
7. Draw drinks to refill syrup lines and flush the chloride solution from the dispenser.
8. Taste the beverage to verify that there is no off taste.

TROUBLE SHOOTING

IMPORTANT: Only qualified personnel should service the FLASH CHILLER unit and components.

WARNING: To avoid personal injury and or property damage, always disconnect electrical power. Disconnect all beer lines. If repairs are to be made to system, bleed pressure before proceeding.

FLASH CHILLER

Trouble		Probable Cause		Remedy
Frozen water bath	1. 2. 3. 4.	Bad ice bank control. Refrigerant leak causing undercharge. Defective agitator motor. Dirty water bath.	1. 2. 3. 4.	Replace bad ice bank control. Repair leak, evacuate and recharge. Replace defective agitator. Melt ice, empty & clean bath. Replenish w/fresh water.
Cooling or condensing unit non-operational	1. 2. 3. 4. 5. 6. 7. 8.	No electrical power. Defective ice bank control. Dirty condenser unit. Improper voltage/amperage Loss of refrigerant. Bad overload and relay. Compressor bad. Restriction (pinched or crimped line).	1. 2. 3. 4. 5. 6. 7. 8.	Plug power cord into electrical box. Check on/off switch. Check Compressor Protector, replace if necessary. Replace ice bank control. Clean condenser unit w/vacuum cleaner. Check for proper voltage/amperage. Repair leak and replenish refrigerant. Replace overload and relay Replace compressor. Repair, straighten or replace defective line.
Agitator motor not operating	1. 2. 3. 4.	Agitator propeller obstructed or lost. Low voltage. Loose, unplugged, or broken wiring. Bad agitator motor.	1. 2. 3. 4.	Remove obstruction or re-Attach propeller. Voltage must be at least 110/220 volt at terminals. Tighten connection or replace broken wiring. Replace agitator motor.
Compressor does not operate	1. 2. 3. 4. 5. 6. 7. 8.	No power source. Electrical power to cooling unit turned off. Low voltage. Loose, disconnected, or broken wire. Inoperative ice bank control. Inoperative overload protector or start relay. Inoperative compressor. Full ice bank.	1. 2. 3. 4. 5. 6. 7. 8.	Plug power cord to electrical box. Check line voltage. Turn on power switch to unit. Voltage must be at least 110 V at compressor terminals at start. Tighten connection or replace broken wiring. Replace ice bank control. Replace defective part. Replace compressor. Refrigeration not called for.

Compressor works continuously but does not form sufficient ice bank	1. Cooling capacity is exceeded by over drawing. 2. Cooling unit located in excessively hot area. 3. Air circulation through condenser coil is restricted 4. Loss of refrigerant or in-sufficient charge.	1. Reduce amount of drinks taken per given time of install higher volume unit. 2. Relocate cooling unit. Or cool area. 3. Check and if necessary, clean condenser coil. 4. Repair leak and/or recharge with sufficient refrigerant.
Note: Ice bank freezes from bottom of evaporator upward. A refrigerant leak or insufficient charge might show ice at bottom and not at top of evaporator.		
Compressor will not stop after sufficient ice bank is produced	1. Ice bank control capillary tube kinked or broken. 2. Ice bank control stuck in closed position.	1. Replace ice bank control. 2. Replace ice bank control.
Note: During overload protector shut off condenser fan motor will continue to work. Otherwise, troubleshooting condenser fan motor problems is the same as "Compressor does not operate", paragraph in addition to the following.		
Condenser fan motor not operating	1. Electrical cord loose or disconnected from condenser fan motor or compressor terminals. 2. Fan blade obstructed. 3. Inoperative condenser fan motor.	1. Tighten connections or replace cord. 2. Remove obstruction. 3. Replace condenser fan motor.

NOTE SECTION

Frequently Called Numbers:

CO2 SETTINGS:

High Pressure _____ PSI
Low Pressure _____ PSI